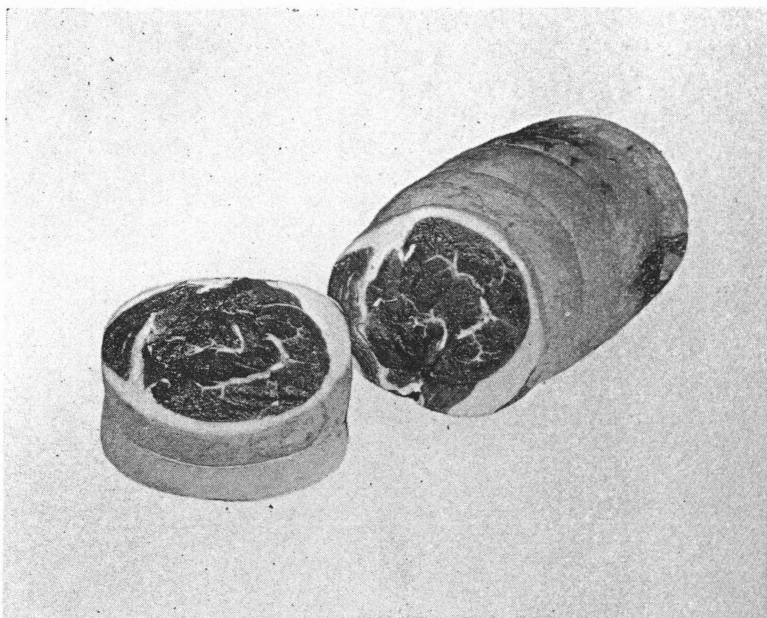


CANNING MEAT IN THE HOME



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CANNING MEAT IN THE HOME

By H. L. HARRIS, Extension Specialist in Food Preservation

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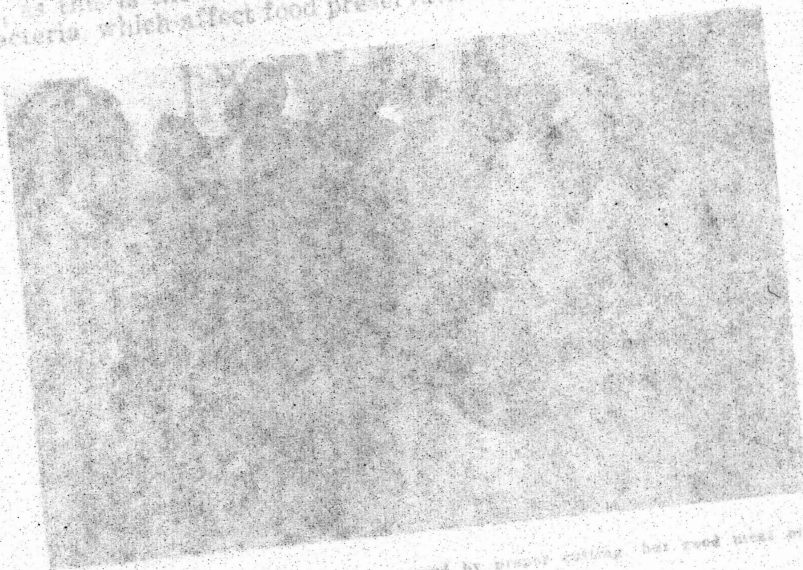
The meat is better in quality if it is allowed to remain in cold storage two or three days for ripening.

Chill Meat For Canning

The meat should be chilled as rapidly as possible. After dressing hang the carcass in a cool place until the following day before cutting into pieces for canning. Do not allow the meat to freeze solidly.

Meat should be canned as quickly as possible after it is removed from cold storage because pieces of meat that are cold do not tend to develop spoilage bacteria as quickly as warm pieces of meat.

It is important at all times to prevent the meat from standing at a temperature between 45 degrees F. and 100 degrees F., as this is the best breeding temperature for objectionable bacteria which affect food preservation.



The tenderness of meat can be improved by proper cutting but good meat must go into the can before it can come out of it.

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By Grace I. Neely, Extension Specialist in Food Preservation

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It is important at all times to prevent the meat from standing at a temperature between 105 degrees F. and 150 degrees F., as this is the best breeding temperature for objectionable bacteria, which affect food preservation.



The tenderness of meat can be conserved by proper cutting, but good meat must go into the can before it can come out of it.

Process Meat Under Pressure

The U. S. Department of Agriculture and the Texas A. and M. College Extension Service recommend that all meats canned be processed under steam pressure.

Precaution In Using Canned Meat

Further protection in the use of canned meat is provided by boiling the meat 10 minutes in an open kettle as soon as it is emptied from the can. This boiling of meat after opening is protection in case any toxins may have been formed in the can.

Two types of spoilage may occur in canned meats: putrefaction which announces itself by a disagreeable odor; and botulinus poisoning, which develops from certain toxins formed in the meat by the botulines organism, this spoilage is less readily detected in the initial stages and is deadly. Prevention of spoilage is accomplished by canning at temperatures above the boiling point as indicated in the discussion of the pressure cooker.

Can A Carcass

When carcasses are to be canned in a single day the following recommendations are important:

- Use large iron wash pots;
- Use at least 6 pressure cookers with stove space for each;
- Use tin cans, this facilitates rapid handling and cooling;
- Use 2 or 3 gallons of fat if the meat is to be seared; this may be combination of suet and lard.

Be Clean And Careful

It is important that all meat be handled in a strictly sanitary way. Table tops and utensils must be cleaned thoroughly in advance. Wash wooden equipment with hot soapy water then rinse with boiling water. Wooden equipment which is not well cleaned is a very dangerous source of spoilage bacteria.

Pans and kettles in which the meat is to stand should be of enamel ware, aluminum, retinned metal or stainless metal. Copper and iron may discolor the meat. The meat left in a galvanized container for over half an hour is likely to take up a harmful amount of zinc.

If galvanized tubs or buckets are to be used they should be lined with plain paper or a cloth to prevent meat from coming in contact with the metal.

There Are Many Suitable Containers

Tin cans or glass jars may be used for canning meats.

Each recipe given in this bulletin suggests the type and size of can or jar to use for various products.

Successful use of glass jars depends upon the rims being free from nicks and chips, upon the quality of rubber rings or composition tops used, and upon tops fitting tightly.

After filling the containers seal each kind as follows:

When a screw top jar is used, use a new clean rubber and screw the lid on firmly. New lids each year are desirable.

When a glass top jar with a wire clamp is used, place the rubber and lid on evenly and raise both clamps. Then pull down the lower clamp.

When an automatic seal jar is used, fasten the lid with the clamp—it is self sealing as it cools.

For the glass jars with two piece caps which consist of screw band and lid with sealing composition attached, place the lid on the jar, and turn the screw band down firmly. Do not tighten after processing.

Lids for cans have three types of gaskets; paper, composition, and rubber. Keep the ones with the paper gaskets dry until cans are sealed.

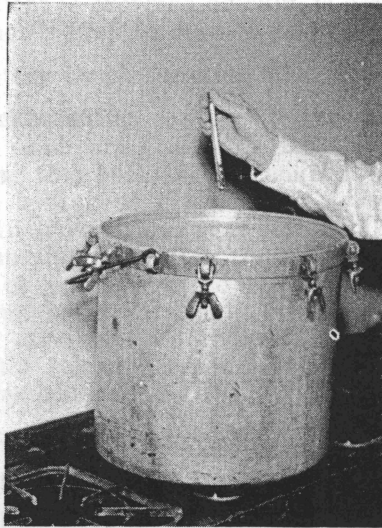
The sealer should be adjusted and checked to give an air-tight seal. Adjust the sealer when changing from one type of lid to another.

Check Gauges On Pressure Cookers

Check the gauges on pressure cookers with a maximum thermometer at least once a year; oftener would be better. This thermometer should be inclosed in a metal case to prevent breaking so easily.

Before using check the maximum thermometer by holding the bulb end well under boiling water. Boil for a few minutes and if the reading remains 212 degrees F. or 100 degrees C. then the thermometer is correct for these tests, unless the altitude is higher than 2,000 feet.

Shake the mercury down in the thermometer each time after using it; and each time before using see that the mercury is below 228 degrees F.



Test the safety of pressure cookers with a maximum thermometer once a year.

For checking the gauges prepare the pressure cooker as for canning. Place the metal jacketed maximum thermometer in an empty jar and set it in the center of the pressure cooker on the rack, or suspend in the pressure cooker. Close the cooker, place it on the fire, exhaust the air by letting the steam escape for 7 minutes in a steady stream or until the reading on the dial reads $\frac{1}{2}$ to 1 pound pressure before closing the petcock. Close the petcock, and when the gauge reads 10 pounds or 240 degrees F. hold at this temperature for 5 minutes, remove at once from the heat. Let the gauge return to 5 pounds pressure; after which open the petcock slowly. When the dial registers zero, open the cooker carefully. The thermometer reading should be 240 degrees F. Repeat this test for 15 pounds of pressure, which would be 250 degrees F. and 5 pounds which would be 228 degrees F.

Prepare Carefully For Canning Meats

Cut for tenderness. The tenderness of meat can be preserved by proper cutting. For roasts the pieces should be cut large enough to fit in the can after the shrinkage of pre-cooking. The muscle fiber should run lengthwise of the piece of meat. This permits slicing across the grain. Steak should be cut about three fourths inch thick. The less tender parts may be cut into small cubes for stew or hash or ground for meat loaf, chili or hamburger.

Sear For Flavor

Searing, when meat is browned quickly, is not a necessary part of the processing. It may be done to add flavor if desired.

Preheating Or Exhausting The Air

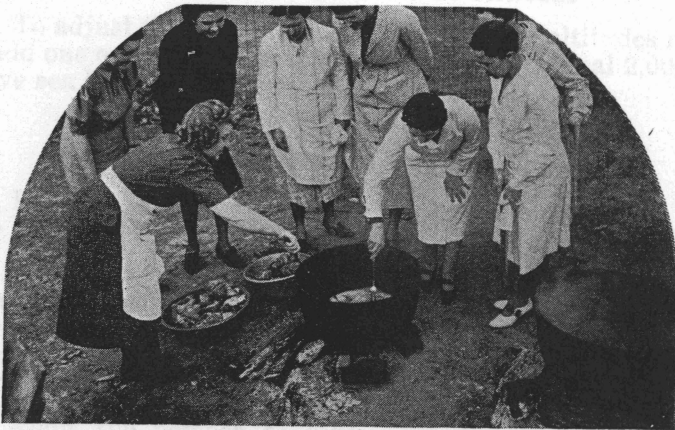
Precooking or exhausting the air in the meat and the container one or the other are **necessary parts of the processing period when using this bulletin.** Precooking is heating the meats to almost boiling or 170 degrees F. or above in a kettle to shrink and to drive air out of it before filling and sealing containers. Exhausting is heating the meat in the container to 170 degrees F. or long enough to drive the air out of the food and the container before sealing. To insure correct temperature for sealing open petcock and release steam, but to prevent loss of liquid release steam slowly. Follow special directions given under each recipe.

Season Before Sealing

Pepper can be added to salt in all recipes if desired. A good proportion is $\frac{1}{4}$ pepper to $\frac{3}{4}$ salt. It is best to put seasoning in container before adding meat, but if placed on the top of the meat seal and invert cans for processing.

Closing Temperature Should Be Hot

Meats should be at least 170 degrees F. when sealed into the containers. If no thermometer is available judge the temperature by the meat being practically boiling hot when sealed. This temperature is necessary to drive sufficient



An open kettle of hot grease in the yard is a good place to sear the roasts.



A good seal is necessary for good keeping.

air out of the meat. Exhausting the air as given under recipes and sealing containers quickly when they are removed from the pressure cooker has been found to give the desired 170 degrees F.

Adjust The Operation To Altitude

To adjust these time tables to the various altitudes in Texas add one extra pound pressure for each additional 2,000 feet, above sea level after the first 2,000 feet.

Process In The Steam Pressure Canner

Put in the rack that holds the jars. Pour boiling water into the cooker $1\frac{1}{2}$ to 2 inches.

When the pressure cooker has been filled with containers of meat, adjust the cover and fasten it securely. In case the cover is fastened by several clamps, fasten moderately tight those opposite each other, one pair at a time. Then go back over the whole set and tighten each pair.

Allow the petcock to remain open until steam escapes from it in a steady stream for **seven minutes** or until pressure comes up **one pound** indicating that no air remains inside.

Then close the petcock. Be sure no steam is escaping so that the cooker will not boil dry and be damaged. Allow the pressure to rise until the gauge registers the pressure that indicates the temperature given in the recipes. Count processing time from the moment the desired temperature and pressure are reached.

Maintain a uniform pressure during the processing period by regulating carefully the source of heat. Fluctuations in pressure are to be avoided in any case, and when canning in glass may result in a loss of liquid. A sudden drop in pressure through cooling or release of steam may also cause this. It is especially important to avoid having the pressure go so high that the safety valve releases the steam suddenly, nor should the steam be allowed to escape suddenly by opening the petcock.

At the end of the processing period remove the cooker from the fire and proceed according to the following directions adapted to jars or cans:

For No. 2 cans or smaller, open the petcock slowly; as soon as the dial registers zero, open the cooker and remove the cans at once and plunge them immediately into cold water.

When using glass jars or No. 3 cans, allow the cooker to cool until the steam gauge registers zero, open gradually, or let stand a few minutes. This is to prevent too sudden a drop in pressure which would cause the liquid to be drawn out of the



Meat should be very hot when sealed into the can; and it should be processed immediately after sealing.

jars. The cans may split under the sudden pressure. Leaving the jars in the cooker for 3 to 4 minutes after the cooker has been opened will reduce the danger of breakage.

When rubber bands are used, tighten the lids after processing when removed from pressure cooker. Allow jars to cool quickly, away from drafts. Plunge tin cans immediately into cold water to cool. The more rapidly the cans are cooled the less danger there is of overcooking the product. Watch carefully for air bubbles that indicate an imperfect seal.

All cans and jars should be labeled and marked as to cut for quality. This facilitates better use of canned meats.

After cooling all cans and jars should be stored in a cool, well ventilated dry place to prevent the fat from becoming rancid.

Pork, Beef, Lamb, and Chevron

Sausage

25 lbs. pork	If desired add
(4 parts lean, 1 part fat)	$\frac{3}{4}$ cup sage
1 cup salt	2 tablespoons red pepper
3 tablespoons black pepper	1 cup brown sugar

The seasoning should be mixed with the cut meat before it is ground.

This sausage may be made into cakes, stuffed into casings or packed in bulk into the container. Sear cakes and casings if desired in deep hot fat or in a pan in the oven until brown. Stuffed casings can be smoked and cured before canning if desired.

Exhaust at 10 pounds of pressure No. 1 cans or $\frac{1}{2}$ pint jars 15 minutes, No. 2 cans or pint jars 25 minutes, No. 3 cans or quart jars 35 minutes. Seal immediately.

Process at 15 pounds pressure: No. 1 cans 50 minutes, No. 2 cans 65 minutes, No. 3 cans 80 minutes and pint glass jars 75 minutes, quart glass jars 90 minutes.

Hamburger

25 lbs. raw ground beef meat	3 tablespoons red pepper
	1 cup salt

Use the same method of mixing, seasoning, packing, exhausting and processing as for sausage.

Roasts

Roasts should be cut large enough to fit the cans after shrinkage, or when there is excess shrinkage one container after exhausting can be used to finish filling the other cans.

Rolled roasts are usually preferred from the forequarter of beef or lamb. Remove all bones before rolling and tying. Cut in lengths which will fit into the container. Sear quickly in deep hot fat if desired. Put $\frac{1}{2}$ tsp. salt in No. 1 cans or $\frac{1}{2}$ pint jars, 1 tsp. salt in each No. 2 can and pint jar and $1\frac{1}{2}$ tsp. salt in each No. 3 can before adding meat.

Exhaust at 10 pounds pressure: No. 1 cans or $\frac{1}{2}$ pint jars 15 minutes, No. 2 cans or pint jars 25 minutes, No. 3 cans or quart jars 35 minutes. Seal immediately.

Process at 15 pounds of pressure: No. 1 cans 50 minutes, No. 2 cans 65 minutes, No. 3 cans 80 minutes, pint glass jars 75 minutes and quart glass jars 90 minutes.

Steak, Pork Chops, and Spare Ribs

Steak, pork chops, and spare ribs, sear in deep hot fat if desired. Add $\frac{1}{2}$ tsp. salt per No. 1 can or $\frac{1}{2}$ pint jar; 1 tsp. salt to No. 2 cans or pint jars and $1\frac{1}{2}$ tsp. salt per No. 3 cans or quart jars.

Exhaust at 10 pounds of pressure: No. 1 cans and $\frac{1}{2}$ pint jars 15 minutes, No. 2 cans and pint jars 25 minutes, and No. 3 cans and quart jars 35 minutes. Seal immediately.

Process at 15 pounds pressure: No. 1 cans 50 minutes, No. 2 cans 65 minutes, No. 3 cans 80 minutes and $\frac{1}{2}$ pint jars 60 minutes, pint jars 75 minutes and quart jars 90 minutes.

Head Cheese

Clean hog's head thoroughly by washing and scraping at the time of scraping the whole carcass. Remove eyes, burr of ear and bones which contain cavities. Trim off excess fat from jowls. Soak in cold water over night. Cook in pressure cooker with 2 cups of water at 15 pounds pressure for 40 minutes. Grind meat using coarse plate. Season to taste. Pack into suitable containers for molding, weight and press if the cheese is to be used fresh.

For canning, the cheese is preheated by heating to near boiling temperature or 170 degrees F. when packed into container. Seal immediately.

Process at 15 pounds of pressure: No. 1 cans 55 minutes, No. 2 cans 65 minutes, pint glass jars 75 minutes.

Mince Meat

The head may be made into mince meat if preferred.

5 cups ground beef	2½ cups raisins
5 cups brown sugar	2½ cups currants
½ cup vinegar	1 tablespoon mace
6 medium sized oranges	2 tablespoons allspice
6 large lemons	2 tablespoons cinnamon
Peel of 2 lemons and 2 oranges	2 tablespoons cloves

Wash currants, raisins, oranges and lemons and let drain. Mix sugar and spices. Peel lemons and oranges. Cut pulp into small uniform pieces, and run the peels through a food chopper using medium knife. Mix all ingredients together.

Preheat by heating to boiling temperature, or 170 degrees F., place in standard enamel tin cans or glass jars.

Process immediately at 15 pounds pressure: No. 1 cans at 50 minutes, No. 2 cans 65 minutes, pint glass jars 75 minutes.

Liver Paste

3 pounds of veal or beef liver	1 teaspoon black pepper
1½ pounds of fresh pork (1-5 fat, 4-5 lean)	1 teaspoon cloves
2 tablespoons salt	1 cup chopped onion
3 eggs	1 cup toasted bread or cracker crumbs

Run the meat and seasoning through meat chopper. Beat eggs and mix all together.

Preheat by heating to boiling temperature or 170 degrees F. Fill cans and seal immediately.

Process at 15 pounds pressure, No. 1 cans 55 minutes, No. 2 cans 70 minutes, and pint glass jars 80 minutes.

Scrapple

The head, heart, tongue and bones may be used. Place in steam pressure cooker, add about 1 quart of water and steam 45 minutes under 15 pounds pressure. Remove the meat from the bones and grind. Strain the stock and let it set until the fat rises to the top. Skim excess fat off. Heat to boiling and add to a cereal mixture, made by mixing equal parts of corn meal, whole wheat or buckwheat and shorts. Add only enough stock to make a very stiff mixture. Add the ground meat which has been reheated. Equal proportions of meat and cereal mixture make a very tasty product.

Preheat by heating to boiling temperature or 170 degrees F. Fill containers and seal immediately.

Process under 15 pounds pressure No. 1 cans 60 minutes, No. 2 cans 70 minutes, and pint glass jars 80 minutes.

Pickled Pigs Feet

Clean pig's feet carefully. Place in pressure cooker. Add water and process under 10 pounds pressure 60 minutes. Remove from cooker and place in stone jar; weight and cover with spiced vinegar made as follows:

1/2 gallon vinegar (pure apple cider)	1 tablespoon of salt
1 1/2 tablespoons of celery seed	1 onion ground fine
1/2 cupful of grated horseradish	1 teaspoon whole cloves
1 cup sugar	1/2 stick cinnamon
1 1/2 tablespoonfuls of mustard seed	

Mix all dry ingredients, tie in a bag, add to vinegar and bring to the boiling point. Cover and let spice infuse for one or two hours. Remove the bag of spices, heat and pour the vinegar over the feet.

Preheat by heating to about boiling or 170 degrees F. Pack into standard enamel lined cans or glass jars and seal immediately.

Process under 15 pounds pressure: No. 2 cans 70 minutes and quart glass jars 80 minutes.

Swiss Steak

Cut round steaks 1 inch thick and sear. Cut in pieces which will fit into the containers, using for cutter a can which has been cut and not reflanged. Pack into containers. Sprinkle each piece with chopped onions. Mix 2 tablespoons bacon drippings, 1 tablespoon of browned flour with 1/2 cup of hot tomato juice for each container. Finish filling with hot tomato juice.

Exhaust at 10 pounds of pressure No. 2 cans or pint jars 25 minutes, No. 3 cans or quart jars 35 minutes. Seal immediately.

Process at 15 pounds pressure: No. 2 cans 60 minutes, No. 3 cans 75 minutes, pint jars 70 minutes and quart jars 85 minutes.

Stew

12 lbs. stew meat
4 tsp. celery seed

3 cups finely chopped onion
6 tablespoonfuls salt

Cut into cubes 1 or 1½ inches thick. Sear in small amount of fat until white. Add onions and salt. If tomatoes, carrots, parsnips or turnips are desired, they may be diced and added in the proportion of ½ cup to each pound of meat used. Pre-heat by heating to near boiling point or 170 degrees F. Seal immediately.

Process at 15 pounds of pressure: No. 1 cans 50 minutes, No. 2 cans 60 minutes, and No. 3 cans 70 minutes, ½ pint jars 60 minutes, pint jars 70 minutes and quart jars 80 minutes.

Chili

15 pounds meat ground coarsely	3¾ cups of chili powder or pepper
7 cups finely chopped onion	pulp
½ cup of finely chopped garlic	½ cup salt
4 cups of fat	4 tsp. comino seed
	Add water for desired consistency

Melt fat and fry onions and garlic until a golden brown. Add meat and sear until white, then add chili powder or pepper pulp, salt, comino seed and water. Cook until when larger pieces of meat are cut no blood is visible. Fill container with hot chili at least 170 degrees F. Seal immediately.

Process at 15 pounds of pressure: No. 1 cans 50 minutes, No. 2 cans 60 minutes and pint glass jars 70 minutes.

Cook Bones In Pressure Cooker

Fill cooker with bones. Add 2 quarts of water. Process at 10 pounds pressure for 50 minutes or steam until the meat will slip. Strain broth from soup stock and let cool. Meat can be used for hash or meat loaf.

Hash Meat

Remove the meat from the gristle and bone.

Preheat by bringing to boil or 170 degrees F., pack hot into container, cover with hot broth, seal immediately.

Process at 15 pounds pressure: No. 1 cans 55 minutes, No. 2 cans 65 minutes, and pint glass jars 75 minutes.

Meat Loaf

5 pounds of meat	1 tsp. sage
5 tablespoons of bread crumbs	1 tsp. celery seed
2 tablespoons of salt	2 tablespoons finely chopped onion
1 tsp. pepper	2 eggs, beaten together

Grind the meat and mix thoroughly with the seasoning. One or two cups of broth may be added, according to the dryness of the meat.

Preheat by heating to near boiling point or 170 degrees F.; fill containers. Seal immediately.

Process at 15 pounds pressure: No. 1 cans 50 minutes, No. 2 cans 65 minutes, and pint glass jars 75 minutes.

Soup Stock

Skim excess fat from bone broth. Strain, heat and pour into containers. If bones are cooked in the pressure cooker, broth will not need to be concentrated. If covered with water and boiled in open kettle, the broth should be boiled down until it will congeal when cold.

Preheat by bringing to boil. Seal immediately.

Process at 15 pounds pressure: No. 1 cans 20 minutes, No. 2 cans 25 minutes, No. 3 cans 40 minutes, and pint glass jars 30 minutes.

Brains

Soak in several waters to draw out the blood. Remove the membranes. Fry in hot fat. Sprinkle with salt and pepper.

Preheat by bringing to near boil, or 170 degrees F., seal immediately.

Process at 15 pounds pressure: No. 1 cans 55 minutes, No. 2 cans 65 minutes, and pint glass jars 75 minutes.

Sweet Breads

Clean and soak in several changes of cold water for about two hours. Drain and boil for about five minutes in salty water. Pack into containers and add about 4 tablespoons of hot water; or broil in butter or bacon drippings, and add two tablespoons of fat in which they were broiled.

Preheat by bringing to near boil, or 170 degrees F., seal immediately.

Process at 15 pounds pressure: No. 1 cans 50 minutes, No. 2 cans 60 minutes, and pint glass jars 70 minutes.

Tongue

Clean, boil and skin. Pack into containers with 4 tablespoons of broth.

Exhaust at 10 pounds of pressure: No. 1 cans 15 minutes, No. 2 cans or pint jars 25 minutes; seal immediately.

Process under 15 pounds of pressure: No. 1 cans 50 minutes, No. 2 cans 60 minutes, and pint glass jars 70 minutes.

Heart

Trim the heart and remove the small white tendons from inside. Wash out all blood clots. Pre-cook in salt water, pack hot about 170 degrees F., into containers, add 4 tbsp. of broth, seal immediately.

Process at 15 pounds pressure: No. 1 cans 50 minutes, No. 2 cans 60 minutes, No. 3 cans 70 minutes, and pint glass jars 65 minutes.